



## UPPER SAN JACINTO RIVER BASIN REGIONAL SEDIMENTATION STUDY

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### **Task 1101 - Project Management**

This task is overarching and will occur throughout the duration of the project. It includes the overall management of the project and project team (including the consultant team selected to perform the study and SJRA staff), coordination with project funding partners and stakeholders, public engagement efforts, meetings, invoicing, etc. The lead project Consultant (KIT Professionals, Inc.) will provide management of the overall consultant team to ensure project goals and requirements are met.

### **Task 1102 - Inventory Available Existing Data and Watershed Characterization**

The project team will acquire and organize relevant prior studies, models, and data (e.g., soils, land use, impervious cover, topography, and regional geology) related to completing the sediment study for the Upper San Jacinto River Basin. The project team will perform preliminary data analysis to locate highly erodible soils and areas of sediment erosion and accumulation. These efforts will be summarized in an Existing Data Inventory Technical Memo (TM 1).

The project team will then group subwatersheds in the basin into three (3) to five (5) categories (or “bins”) based on shared characteristics, coordinate discussions with stakeholders, evaluate known sediment problem areas, and select three (3) subwatersheds to be used as calibration subwatersheds for detailed analysis in subsequent tasks. These calibration subwatersheds will form the basis for estimating sediment characteristics of other subwatersheds with similar characteristics. These efforts will be summarized in a Watershed Characterization Technical Memo (TM 2).

### **Task 1103 - San Jacinto Watershed’s Annual Sediment Supply and Storage**

The goal of this task is to determine the annual “sediment budget” for the Study area. Detailed assessments of sediment supply and storage volumes will be conducted on the three subwatersheds selected in Task 1102, including determination of the types of sediment sources found in the subwatersheds (e.g., sediment originating within stream channels or from overland flow and erosion). Sedimentation in Lake Houston will also be analyzed, including comparison of historic volumetric surveys and water storage estimates. These efforts will be summarized in a San Jacinto Watershed Annual Sediment Budget Technical Memo (TM 3).

### **Task 1104 - Sediment Transport Modeling**

The goal of this task is to obtain additional information regarding how sediment is transported in the basin using modeling. At one to two United States Geological Survey (USGS) stream gage locations, the project team will perform sediment sampling to quantify and characterize sediment that is transported along the streambed during storm events. These results will be used in modeling efforts to estimate the total sediment yield along the sampled streams/ivers. These efforts will be summarized in a Sediment Transport Modeling Technical Memo (TM 4).

### **Task 1105 – Extrapolation of Subwatershed Data to Entire Upper San Jacinto River Basin and Prioritization of Subwatersheds for Sediment Source “Hotspot” Investigation**

In this task, the data obtained in previous tasks which identified sediment sources and sediment storage within representative subwatersheds (“calibration subwatersheds”) will be extrapolated and applied to all other subwatersheds in the Upper San Jacinto River Basin. This will provide a total sediment budget and sediment yield for the basin and allow the project team



to rank subwatersheds based on their relative contribution of sediment. The project team will prioritize subwatersheds, ultimately selecting three (3) that should be further evaluated for individual sediment source “hotspots” (Task 1106). These efforts will be summarized in a brief San Jacinto Subwatershed Extrapolation and Prioritization Technical Memo (TM 5).

#### **Task 1106 – Sediment Source “Hotspot” Investigation of Subwatersheds and Prioritization of Recommended Areas for Sediment Management or Opportunity**

This task will include evaluation of the prioritized subwatersheds from Task 1105 to identify individual sediment source “hotspots,” which are locations of significant, individual sediment contributions. Examples of potential hotspots include stretches of extreme eroding streambank/streambed and land uses or operations that produce excess sediment runoff. The findings of this evaluation will inform identification of conceptual sediment mitigation solutions and confirm which sites are the highest priorities for implementation of those solutions. The project team will develop a prioritization scheme (i.e., factors, weighting, etc.) and prioritize sediment hotspot areas. These efforts will be summarized in a San Jacinto Subwatershed Sediment Source Hotspot Investigation Technical Memo (TM6).

#### **Task 1107 - Conceptual Solution Development and Implementation Strategy**

In this task, conceptual solutions will be identified and vetted. These solutions may include structural projects (e.g., stream restoration, sand traps) and/or non-structural best management practices (e.g., riparian buffer requirements). Conceptual solutions will be developed for the top ten ranked sites from Task 1106, and each will include a conceptual schematic, preliminary estimates of expected sediment reduction, capital and/or operations and maintenance cost estimates, evaluation of cost-benefit (e.g., cost/tons of sediment removed), landowner agreement requirements, and environmental permitting requirements. Impacts and/or benefits to any local drainage infrastructure will also be discussed. Solutions will be developed such that they would have no negative effect on other properties within the basin. The next steps for each recommended solution, potentially to include additional analysis, modeling, ground-truthing, etc., will be determined. These efforts will be summarized in a Conceptual Solutions Development and Implementation Strategy Technical Memo (TM 7).

#### **Task 1108 - Identify Potential Implementation Partners and Permitting Agencies**

This task will identify potential partners and/or sponsors who could assist with the future implementation of the recommended solutions. The task will also include identification of permitting agencies and regulatory requirements that need to be coordinated with and met for the recommended solutions to be implemented. These efforts will be summarized in a Summary of Potential Implementation Partners and Permitting Agencies Technical Memo (TM 8).

#### **Task 1109 - Technical and Financial Assistance Sources**

This task will identify potential funding and technical assistance sources that may be utilized for implementation of the recommended solutions, including recommendations for agencies that project sponsors should engage for support. These efforts will be summarized in a Potential Technical and Financial Assistance Sources Technical Memo (TM 9).

#### **Task 1110 - The San Jacinto Regional Sediment Management Plan**

This is the culminating task of the study which will include the compiling of the various memos developed in the above tasks into the San Jacinto Regional Sediment Management Plan. The plan will include next steps and potential future phases to implement the recommended sediment management solutions. A one-page handout summarizing the Plan’s goals, findings, and recommendations will also be developed for easy stakeholder review.